

CLIMATOLOGICAL DATA FOR OCTOBER, 1913.

DISTRICT NO. 11, CALIFORNIA.

Local Forecaster G. H. WILLSON, District Editor.

GENERAL SUMMARY.

October, 1913, was a month of unusually pleasant weather, with a large number of warm, sunshiny days, moderately cool nights, and an exceptionally light rainfall. The temperature was slightly above the normal in all sections, and while no records were broken for high temperatures, there were two warm periods, one from the 1st to the 3d and the other from the 18th to the 24th, when the day temperatures in the great valley and along the coast ranged from 90° to 100°. A peculiar feature was the location of the stations reporting the highest temperature during the month: Healdsburg, in a northern coast valley, Ojai Valley, on the southern coast, and Indio in the Colorado desert, each reporting a maximum temperature of 101°. The lowest temperature, 7°, occurred at Greenville in Plumas County.

There were a very large number of clear days during the month and the percentage of sunshine exceeded the average at all stations. The weather was ideal for fruit drying and raisin making, and these crops were harvested without damage. Citrus fruit made excellent growth, and the outlook for an early harvest is excellent.

The precipitation was very light in all sections and much below the normal. There were a few scattered showers from the 6th to the 8th, and again on the 30th and 31st. This was the driest October since the records for the State began in 1897, and probably one of the driest ever known in this State. The rivers approximate the lowest stages ever known, many wells and springs have gone dry, water and power companies are taxed to their limits, and there is not sufficient water for irrigation purposes in most places. There were many forest fires in all portions of the State, and much damage has been caused by them.

TEMPERATURE.

The mean temperature for the State was 0.8° above the normal. The following table gives the means and departures for each October from 1897 to 1913, inclusive:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	°F.	°F.		°F.	°F.
1897.....	58.5	-2.6	1906.....	63.4	+2.3
1898.....	61.0	-0.1	1907.....	62.0	+0.9
1899.....	58.1	-3.0	1908.....	58.3	-2.8
1900.....	58.8	-2.3	1909.....	60.2	-0.9
1901.....	63.2	+2.1	1910.....	61.9	+0.8
1902.....	60.7	-0.4	1911.....	59.1	-2.0
1903.....	64.0	+2.9	1912.....	57.1	-4.0
1904.....	61.6	+0.5	1913.....	61.9	+0.8
1905.....	60.7	-0.4			

PRECIPITATION.

The following table gives the average precipitation and departure from the normal for each October from 1897 to 1913, inclusive:

Year.	Average.	Departure.	Year.	Average.	Departure.
	Inches.	Inches.		Inches.	Inches.
1897.....	1.79	+0.34	1906.....	0.09	-1.36
1898.....	0.59	-0.86	1907.....	1.56	+0.11
1899.....	3.50	+2.05	1908.....	1.37	-0.08
1900.....	2.34	+0.89	1909.....	1.66	+0.21
1901.....	1.50	+0.05	1910.....	0.83	-0.62
1902.....	1.78	+0.33	1911.....	0.58	-0.87
1903.....	0.49	-0.96	1912.....	0.36	-1.09
1904.....	2.74	+1.29	1913.....	0.08	-1.37
1905.....	0.12	-1.33			

The greatest monthly amount was 3.92 inches at Weitchpec and the greatest 24-hourly amount was 2.55 inches on the 7th, at the same station. There was no rainfall at 131 stations.

Stations.	Sunshine.	
	Hours.	Percentage of possible.
Eureka.....	221	64
Fresno.....	323	93
Los Angeles.....	283	80
Mount Tamalpais.....	315	91
Red Bluff.....	290	84
Sacramento.....	326	94
San Diego.....	291	83
San Francisco.....	297	85
San Jose.....	299	86
San Luis Obispo.....	265	76

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS DURING THE MONTH OF OCTOBER, 1913.

By N. R. TAYLOR, Local Forecaster.

Sacramento watershed.—There was little difference between the average stages of the rivers in this watershed during October and those of the preceding month. All streams continued exceptionally low, and some unprecedentedly so. The Sacramento River between Red Bluff and Walnut Grove averaged from 2 to over 3 feet lower than the usual October stages. The Feather River was the lowest of which there is a record, and the Yuba and American Rivers averaged only one-tenth of a foot above the stages of the preceding month, when the low-water record for both streams was broken.

Practically no precipitation occurred in any section of the drainage basin of the Sacramento, the month being one of the driest in the history of this section.

Numerous wells, springs, and some water courses have failed, and in some cases are completely dry. All hydro-electric plants have experienced considerable difficulty in running, and none has a full head of water.

Navigation on the Sacramento between Sacramento City and the bay was uninterrupted during the month. It was fairly good as far up as Colusa, but the channel has become tortuous and perplexing, with barely sufficient water for the upriver steamers.

Lower San Joaquin watershed.—The rivers of this watershed averaged somewhat lower than during the preceding month, and were lower generally than at any other time in their history. There was an alarming scarcity of water for all purposes, and there was practically none in the Calaveras River after the 5th of the month.

**NOTES ON THE STREAMS AND WEATHER OF THE
UPPER SAN JOAQUIN WATERSHED.**

By W. E. BONNETT, Local Forecaster.

All streams of the Upper San Joaquin watershed continued at very low stages throughout the month of October, but they were not the lowest of record at any point. As might be expected in a month with an almost total absence of rainfall at all elevations, there was practically no fluctuation. However, the flow was somewhat better sustained than the low stages earlier in the season indicated as probable late in the season.

In the temperature record the month is divided into two almost equal parts, during the first of which the

temperature was largely deficient, while during the second it was even more largely in excess, so that as a whole it was about 2° warmer than the average October.

Frosts which occurred on the 5th and 6th are among the earliest recorded and probably more damaging than any that have occurred on so early a date. Owing to the dry condition of the air and soil there was practically no actual deposit of frost, but vines and tender vegetation in many localities were blackened. It was at first thought that fruit still on the vines had suffered no injury, but that it was badly injured appeared several weeks later, when it was more mature and preparations for shipment were made. Sufficient numbers of berries on each bunch were softened, so as to endanger the keeping qualities of the whole.

The fine drying weather which prevailed in September continued through October, with very few threatening periods and practically no rainfall. Ninety-three per cent of the possible sunshine equals the highest previously recorded, and the per cent of humidity was the lowest of record for the month of October.